

DATE: February 18, 2020

FILE: 1700-02/2020/Function 335-338

TO: Chair and Members
Comox Valley Sewage Commission

Supported by Russell Dyson
Chief Administrative Officer

FROM: Russell Dyson
Chief Administrative Officer

R. Dyson

RE: 2020 - 2024 Financial Plan - Comox Valley Sewerage Service - Function 335-338

Purpose

To provide the Comox Valley Sewage Commission with the proposed 2020 - 2024 Financial Plan and work plan highlights for the Comox Valley Sewerage System (CVSS) service, functions 335-338.

Recommendation from the Chief Administrative Officer:

THAT the proposed 2020 – 2024 Financial Plan for Comox Valley Sewerage System service, function 335-338, be approved subject to the following amendments to the personnel costs included in the recommended 2020 – 2024 Financial Plan, to be funded by reductions in the contributions to capital works reserves:

	2020	2021	2022	2023	2024
Currently proposed	\$1,667,154	\$1,703,985	\$1,739,476	\$1,775,702	\$1,812,699
Amend to	\$1,777,633	\$1,816,672	\$1,854,416	\$1,892,941	\$1,932,286

Executive Summary

- Revenue requirements are higher than those approved in the 2019-2023 Financial Plan, including a significant increase to the requisition in 2024 to cover the anticipated costs of borrowing associated with conveyance and treatment upgrades.
- The proposed 2020-2024 Financial Plan includes an error in the personnel costs which is being corrected in the motion attached to this report. After changes in allocations of several key staff and wage increases scheduled in the CUPE agreement the financial plan includes approximately 1.5 per cent increase in personnel costs for this service.
- The Liquid Waste Management Planning (LWMP) process began in 2018, with selection of preferred solutions for conveyance, treatment and resource recovery expected in early 2020. A three per cent increase in operating costs is expected for the service in 2020, largely attributable to continued work on the LWMP process.
- Significant resources are being expended on engaging with the public and all key stakeholders throughout the LWMP process to ensure that the finished LWMP has the support of the community.
- Capital projects completed in 2019 include the compost facility expansion at Bevan Road and raising of manholes along the Queen’s ditch. A close-out report for projects completed in 2018 and 2019 is attached as Appendix B to the report.
- Several key capital infrastructure projects were initiated in 2019 and will be completed in 2020, including installation of an equalization basin at the Comox Valley Water Pollution Control Centre

(CVWPCC), an upgrade to the CFB Comox Pump Station and preliminary design for conveyance upgrades following completion of the LWMP process.

- Funding for capital projects will be from a combination of capital works reserves, development cost charge (DCC) reserves, new debt and grant funding (where available). Reserve funds will be drawn to minimum levels over the 2020-2024 Financial Plan to help fund capital projects.

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Stakeholder Distribution (Upon Agenda Publication)

Comox Valley Sewage Advisory Committee	✓
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Board Strategic Drivers

The Comox Valley Regional District (CVRD) Board has set four strategic drivers to guide service delivery. Not all services will be influenced by all drivers. Table No. 1 notes the degree of influence the drivers have on projects and work plans.

Table No.1: Strategic Drivers


Fiscal Responsibility:	Climate Crisis and Environmental Stewardship and Protection:
<ul style="list-style-type: none"> • The CVSS is facing a period of intense capital spending due to the age and capacity of infrastructure and the resolution of environmental risk. A review of options to phase or stage capital upgrades to limit impact on users is being considered in development of the capital upgrade plan moving forward. 	<ul style="list-style-type: none"> • The primary driver for replacement of the conveyance system is to remove the forcemain along Willemar Bluffs to eliminate a large environmental risk. • All new infrastructure will be designed for resilience to predicated impacts of climate change.
Community Partnerships:	Indigenous Relations:
<ul style="list-style-type: none"> • The LWMP process involves intensive consultation with stakeholders from within and outside the service area communities to select the preferred conveyance approach and levels of treatment at the CVWPCC. • The service also works closely with its neighbours to resolve issues. 	<ul style="list-style-type: none"> • The LWMP process includes significant consultation with K’ómoks First Nation (KFN) to resolve historical and future impacts of the sewer infrastructure on KFN Indian Reserve No. 1 (IR1) and work towards possible extension of sewer service to the KFN development lands in the south.

Financial Plan Overview

The 2020 - 2024 proposed five-year Financial Plan for the CVSS, function 335-338, including service establishment information, the requisition summary and the operating and capital budgets, is available within the full proposed budget binder, provided in both searchable PDF and e-reader formats, located on the CVRD financial plan web page at www.comoxvalleyrd.ca/currentbudget.

Table No. 2 on the following page summarizes the 2020 proposed budget as compared to the 2019 adopted budget. Significant variances from 2019 adopted budget will be discussed in the financial plan sections below.

Table No. 2: Financial Plan Highlights

		#335 Comox Valley Sewerage		
Operating	2019 Budget	2020 Proposed Budget	Increase (Decrease)	
Revenue				
Requisition	6,030,682	6,400,000	369,318	
Sale Services User Fees	977,204	1,039,045	61,841	
Other Revenue/Recoveries	4,598	4,676	78	
Prior Years Surplus	727,406	104,762	(622,644)	
	\$ 7,739,890	\$ 7,548,483	\$ (191,407)	
Expenditures				
Personnel Costs	1,758,835	1,667,154	(91,681)	
Directors Remuneration	7,200	7,200	-	
Operating	2,400,620	2,470,117	69,497	
Contribution to Reserve	2,585,895	2,391,960	(193,935)	
Transfer to Other Functions	65,000	65,000	-	
Debt Charges	922,340	947,052	24,712	
	\$ 7,739,890	\$ 7,548,483	\$ (191,407)	
Capital				
Funding Sources				
Short Term Debt Proceeds	2,700,000	3,000,000	300,000	
Transfer from Reserve	10,882,081	8,939,000	(1,943,081)	
	\$ 13,582,081	\$ 11,939,000	\$ (1,643,081)	
Funding Applied				
Capital Projects & Equip	13,582,081	11,939,000	(1,643,081)	
	\$ 13,582,081	\$ 11,939,000	\$ (1,643,081)	

Highlights of the 2020 - 2024 Proposed Financial Plan for function 335-338 include:

Revenue Sources

The main revenue sources for the service and rates are described below:

- Required sewer service revenues: The CVSS is largely funded by direct requisition from the two participating municipalities, being the City of Courtenay and Town of Comox. The proposed requisition for 2020 is consistent with what was included within the 2019-2023 Financial Plan. Increases to the municipal requisition in future years have increased over the 2019-2023 Financial Plan as further development of the options and associated costs for conveyance and wastewater treatment have been developed through the LWMP. Changes to the municipal requisition will likely impact user rates in the City of Courtenay and Town of Comox.
- Department of National Defence contributions are projected to increase proportional to their wastewater generation and the overall operational budget.
- Revenue from the KFN IR1 is budgeted to remain unchanged.
- Revenue from disposal of septage at the CVWPCC is projected to remain the same. A review of the septage tipping fees and an increase in rates will be completed in 2020 to ensure rates are increased proportional to increases of the municipal requisition for future years.

The primary drivers for the increases to the municipal requisition are as follows:

- The main treatment plant, pump stations and conveyance pipelines were commissioned in 1984; parts of these facilities are approaching the end of their design life and/or are at or near capacity.
- Several large scale upgrades are required to improve conveyance pumping capacity, treatment plant capacity, reduce environmental risks and enable community growth.

Personnel

An error was identified in the projected personnel costs for the sewer service. The error is being corrected by the motion attached to this report. A shift from capitalizing capital project management personnel costs to including them in the operating budget, combined with wage increases scheduled in the CUPE agreement, is projected to result in an approximate 1.5 per cent increase in 2020 personnel costs for the service.

Operations

The majority of the budgeted 2020 operating expenses remained unchanged from 2019 amounts, and a three per cent increase in the overall operating budget is required. Table No. 3 below highlights the significant operating expense variances.

Table No. 3: Operating Expense Variances

Account Code	Description	2019 Adopted Budget	2020 Proposed Budget
03-2-336-366	Engineering Fees: Majority of asset management work with AECOM complete in 2020	\$240,000	\$60,000
03-2-336-387	Other Professional Fees: Carry forward of LWMP work and inclusion of odour monitoring.	\$205,000	\$245,000
03-2-337-438	Contract Services Equipment/Machinery (Composting): Maintenance contract with Finning and additional electrical contractor	\$25,000	\$45,000
03-2-338-438	Contract Services Equipment/Machinery (Pump Stations): Additional electrical contractor work for preventative electrical maintenance.	\$40,000	\$55,000
03-2-338-468	Minor Capital: Replacement of exhaust fans at CFB Comox Pump Station and supply fan at Jane Place Pump Station.	\$50,000	\$30,000

Capital

See Appendix A for a detailed list of budgeted capital projects summary. Appendix B provides a capital project close out for projects completed in 2018 and 2019.

Capital projects scheduled for 2020 include:

- CVWPCC: Final commissioning of the equalization basin to buffer peak wet weather flows coming to the CVWPCC. Completion of the basement piping replacement project in 2020. Funded from reserves.
- CFB Comox Pump Station: upgrade to replace pumps at the end of life and upsize at the same time to accommodate for the Greenwood and Hudson trunk flows. Funded from reserves.
- LWMP Conveyance Design: A place holder of \$3M has been included in 2020 to begin design on the preferred conveyance route that will be selected as part of the LWMP process. Funded through short term borrowing.

Looking beyond 2020, significant capital upgrades are required for both conveyance, to remove the forcemain from Willemar Bluffs, and at the treatment plant for capacity upgrades. Both the level of treatment at the CVWPCC and conveyance alignment are being reviewed and completed through the LWMP process. These projects are significant in scope and both have substantial impacts on the municipal requisition.

Reserves

The 2020-2024 Proposed Financial Plan utilizes all available capital works and DCC reserves, effectively drawing reserve funds down to minimum levels. A significant portion of the DCC reserve fund was spent

in 2018/2019 to complete the Hudson Trunk, Greenwood Trunk and Odour Control Upgrade capital projects. Starting 2020 the DCC reserve funds are at minimal levels but could be available in future years depending on the DCCs collected over the five year period.

The projected reserve fund balances as at December 31, 2019, are provided in Table No. 4.

Table No. 4: Projected Reserve Fund Balances

Reserve	Projected Balance at December 31, 2019
Future Expenditure Reserve	\$149,524
Capital Works Reserve	\$6,892,952
DCC Reserve	\$1,923,734

The finalized reserve fund balances will be updated once the 2019 year end is completed.

The capital works reserve fund is used to fund both the asset management plan and priority capital projects required for the service, while DCC reserves can only be used to fund projects which increase the capacity of the service and are included on the DCC project list.

Citizen/Public Relations

In 2017, the CVRD awarded a multi-year contract to Zinc Strategies, a communications consultant, to assist the CVRD with communications for water and wastewater capital projects. With the significant amount of capital spending the CVSS is facing, Zinc Strategies has been crucial in supporting the CVRD Communications team to develop education and outreach material to inform the public about the various upcoming capital projects, including communications materials for the LWMP. Zinc Strategies will continue to support the CVRD Communications team on sewer projects in 2020.

Attachments: Appendix A – “Capital Projects Summary”
Appendix B – “Capital Project Close Out”

Appendix A – 2020-2024 Capital Projects - Comox Valley Sewerage System, Function 335-338

Capital	Project Description	2020 Proposed Budget	2021 Financial Plan	2022 Financial Plan	2023 Financial Plan	2024 Financial Plan
Sewer Conveyance Upgrades	Selection of preferred conveyance option as part of LWMP process in 2020. Begin predesign in late 2020.	\$3,000,000	\$21,000,000	\$21,000,000		
Annual Capital Equipment	Replacement of loader for CVWPCC.	\$260,000				
Compost Facility Expansion	Balance carry forward from 2019 to complete	\$20,000				
Annual Capital Projects	Compost facility bathroom renovation and fiber connection.	\$77,000	\$280,000			
Odour Control - Bioreactors	Begin design and construction of odour control for bioreactors. Project completion in 2021.	\$6,000,000	\$2,500,000			\$1,000,000
EQ Basin (CFWD)	Completion of the EQ basin in early 2020. Basement piping complete Spring 2020.	\$1,600,000				
CFB Comox Pump Station (CFWD)	Engineering contract awarded to McElhanney in 2019. Design and construction complete in 2020.	\$830,000				
Annual Asset Management Capital Projects	PLC replacement at Courtenay pump station and CVWPCC as part of ongoing asset management work.	\$152,000	\$569,000	\$419,000	\$361,000	
LWMP CVWPCC Upgrades	To begin upgrades to the CVWPCC in 2022 after LWMP process.			\$11,500,000	\$10,490,976	
Total		\$11,939,000	\$24,349,000	\$32,919,000	\$10,851,976	\$1,000,000

Appendix A – 2020-2024 Capital Projects - Comox Valley Sewerage System, Function 335-338

Note: All projects approved in the financial plan will be procured in accordance with Bylaw No. 510 and the Board approved Procurement Policy. Any project the Board wishes to receive additional information on prior to the procurement and/or contract award should be highlighted at this time.

The table below highlights the projects, approved budgets, and actual/estimates on project completion.

Project	2018-2022 Financial Plan Amount	Actual/Estimate at Completion	Difference
Hudson Trunk	\$2,345,991	\$2,313,667	(\$41,324)
Greenwood Trunk (including Queen's Ditch Manhole Raising)	\$3,537,000	\$3,536,845	(\$155)
Compost Facility Expansion	\$7,400,000	\$7,359,321	(\$40,679)
CVWPCC Phase 1 Upgrades			
Odour Control	\$2,200,000	\$2,146,758	(\$53,242)
EQ Basin	\$7,400,000	\$3,600,000*	(\$3,800,000)
Total for Projects	\$22,882,991	\$18,956,591	(\$3,935,400)

*Estimate to project completion

Hudson Trunk Construction

Objective:	To relieve pressure from the current system by redirecting flows away from the Courtenay Pump Station as well as redirecting future flow away from the Jane Place Pump Station.	
Scope Summary:	The Hudson trunk project included: <ul style="list-style-type: none"> Installation of 3.2km of gravity trunk sewer extending from the eastern boundary of the City of Courtenay near Idiens Way and the northern boundary of the Town of Comox near Aspen Road to the existing sewer trunk main along Knight Road 	
Final Project Cost:	Total	\$2,313,667
Project Timeline:	Design:	May 2016 – June 2017
	Start of construction:	January 2018
	In operation:	Summer 2018

Project Photos:



Photo 1- Sanitary pipe on Idiens Way



Photo 2- Preparation for paving on Anderton Road

Greenwood Trunk Construction

Objective:	To relieve pressure from the current system by redirecting flows away from the Courtenay Pump Station. Also to service an area of growth in East Courtenay.	
Scope Summary:	The project included the installation of: <ul style="list-style-type: none"> • 2.75km of gravity sewer main; • 23 manholes; and • 2 flow metering manholes. 	
Final Project Cost:	Total	\$3,447,635
Project Timeline:	Design:	2017-2018
	Start of construction:	June 2018
	In operation:	December 2018

Project Photos:



Photo 1- Installation of sanitary sewer along alignment



Photo 2- Installation of sanitary sewer along alignment

Queen’s Ditch Manhole Raising

Objective:	To raise buried manholes to reduce inflow and infiltration and allow access for operations for maintenance and emergency repairs. Originally part of the Greenwood trunk project, this work was separated to obtain more competitive pricing.	
Scope Summary:	The project included the following work: <ul style="list-style-type: none"> • Raising 13 manholes along the Queen’s Ditch. • Installation of a pathway was installed for access of operational staff. 	
Final Project Cost:	Total	\$89,210
Project Timeline:	Design:	May-June 2019
	Start of construction:	July 2019
	In operation:	September 2019

Project Photos:



Photo 1- Installation of manhole



Photo 2- Access path for manholes

Biosolids Compost Facility Expansion

Objective:	To increase the capacity for composting biosolids and to stay compliant with Organic Material Recycling Regulation regulations.	
Scope Summary:	<p>A 34 per cent increase in process capacity from 5,770 to 7,730 of wet tonnes of biosolids. Equipment was nearing end of life at the site and was replaced with larger more efficient equipment. The efficiency upgrades included:</p> <ul style="list-style-type: none"> • Heat exchangers for bunker exhaust air to speed up composting time. • More efficient mixer. • Larger screener. • Automated curing turner. • Storage building for cured compost, an existing building moved from the Comox Valley Water Pollution Control Centre (CVWPCC). • Leachate storage pond, pump station, and paving for containment and treatment of contaminated rainwater. <p>The increase in capacity was obtained using more efficient equipment which allowed for the same number of operators for the facility.</p>	
Final Project Cost:	Total	\$7,381,262
Project Timeline:	Design:	September 2016 – April 2018
	Start of construction:	June 2018
	In operation:	July 2019

Project Photos:



Photo 1- New compost screener



Photo 2- New compost turning equipment



Photo 3- New curing bunkers



Photo 4- New compost mixing equipment

Odour Control Upgrades at CVWPCC

Objective:	In 2015 and 2016, significant study work was completed, including dispersion modelling of odour emissions from the CVWPCC. As a result of the study work a number of odour control upgrades were recommended with to improve odours in the areas surrounding the CVWPCC. Upgrades were expected to decrease odours by 80 per cent.	
Scope Summary:	<ul style="list-style-type: none"> • Retrofitting the existing scrubber to increase its efficiency. • Covering of the primary clarifiers with FRP covers and installing ductwork to contain and treat air through the scrubber before being discharged to the environment. • Adding a dual bed activated carbon polisher downstream of the existing scrubber to further treat air and reduce odours before discharge to the environment. 	
Final Project Cost:	Total	\$2,146,758
Project Timeline:	Design:	July 2017- January 2018
	Start of construction:	March 2018
	In operation:	November 2018

Project Photos



Photo 1- Activated Carbon Polisher



Photo 2- Primary clarifier covers and new ducting

Equalization (EQ) Basin and Basement Piping at CVWPCC- UNDER CONSTRUCTION

<p>Objective:</p>	<p>The intent of the EQ basin is to help buffer peak wet weather flows to the CVWPCC and to ensure the outfall is not overloaded during high tides: it is expected be used about 50 hours/year. The intent of the basement piping project is the replacement of a number of process pipes that run within the basement of the CVWPCC as they are at the end of their service life and are in poor condition.</p>
<p>Scope Summary:</p>	<ul style="list-style-type: none"> • Excavation and construction of a 6,400m³ double lined EQ basin. • Construction of two spoil berms between basin and Curtis Road with the intention of disrupting air flow and blocking sight lines to the plant. • Replacement of a number of process piping lines within the basement of the CVWPCC.
<p>Approved Budget:</p>	<p>\$7,160,000 in 2019-2023 financial plan.</p> <ul style="list-style-type: none"> • \$4,460,000 from capital works reserve. • \$2,700,00 from short term borrowing (not expected to be necessary).
<p>Estimated Total Project Cost:</p>	<p>\$3,600,000, estimated carry forward to 2020 is \$1,600,000.</p>
<p>Project Timeline:</p>	<p><i>EQ Basin:</i> Design: January 2017 - May 2019 Start of construction: July 2019 In operation: February 2020 (forecast) <i>Basement Piping:</i> Start of construction: January 2020 In operation: April 2020 (forecast)</p>

Project Photos:



Photo 1- EQ Basin general layout



Photo 2- Spoil berm